1. Calves must be born under hygienic conditions. Calving cows must be provided with a clean dry area in which to calve down.

2. The calves’ umbilical cord should be sprayed with iodine solution (7%) immediately after birth.

3. Calves must be given a good drink of quality colostrum early in their lives. Each calf should receive 4 litres of colostrum within 6 hours of birth.

4. Calves must be always provided with adequate clean drinking water.

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1. GOLDEN RULES OF CALF REARING

5. Calf pens should be provided with good natural ventilation against heat stress and also protection from any severe cold weather in winter.

6. Calves can be weaned off milk when each one consumes about 1 kg/day of calf concentrate. With the correct feeding management, this should occur by 3 months of age.

7. Permanent identification of each calf (with an ear tag) and good record keeping will always benefit the farmer in the long run.

Notes:

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2 GOLDEN RULES FOR REARING WEANED HEIFERS

1. Weaned heifers require a balanced diet of quality roughages and concentrates. This varies with the age of the calf.

2. Their rumen is still too small for them to only be fed roughages so also feed quality concentrates, containing at least 16 to 18% protein. This could simply be good quality concentrate generally fed to milking cows.

3. All stock requires regular access to clean drinking water.

4. Well reared heifers will show signs of heat within the first 10 to 12 months of their life.

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2 GOLDEN RULES FOR REARING WEANED HEIFERS

5. Well reared heifers have well developed bones hence a good frame size, as assessed by wither height.

6. Well reared heifers will calve down at 24 to 27 months of age.

7. During their lifetime, well reared heifers will produce sufficient extra milk and calves to not only pay for their higher feeding costs but also yield substantial profits.

Notes:

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3 GOLDEN RULES FOR FEEDING MILKING COWS

1. Milking cows have high requirements for water which should be supplied separately as clean drinking water rather than as part of any concentrate slurry.

2. Feed sufficient quality forages in accordance with the cows’ live weight and milk yield and the farmers’ available forage resources.

3. Supplemented with concentrates which are formulated to overcome specific nutrient deficiencies.

4. Consider wilting the forage, by leaving it out in the sun during the day before chopping it up, to reduce its moisture content and encourage the cows to eat more of it, hence produce more milk.

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5. At any one time, approximately 60% of milking cows at rest should be ruminating. This is a good reflection of the overall good herd management which includes appropriate feeding management.

6. If concerned about unbalanced diets in milking herd, closely monitor the manure characteristics, reduction in feed intakes, changes in milk yield and composition (fat and protein or solids-not-fat) and the proportion of cows that are ruminating.

7. Remember that potentially higher yielding cows are more susceptible to other farm constraints such as insufficient quality feed, heat stress, poor animal health and the limited management skills of the farmer.

8. Farmers need to develop the skills to identify when cows are on heat. This require consistent observations, including night time observations.
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**4 GOLDEN RULES FOR BREEDING ADULT COWS**

1. Milking cows need to be well fed to rebreed. If cows are too thin or over fat, they will have poorer fertility.

2. The voluntary waiting period, or days between calving down and rebreeding, should be no more than 50 or 60 days.

3. Look for signs of heat 18 to 24 days after their last heat, if they are still non-pregnant.

4. The best conception rates occur on insemination (natural or artificial) 4 to 12 hours after the first signs of heat.

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5. It is important to keep good records of inseminations and natural mating to ensure good herd reproductive performance and to know when to seek veterinary advice.

6. It may be necessary to cull additional cows if more than 15% of the herd have more than 16 months between calving.

7. Each month farmers should identify non-pregnant cows that have calved more than 80 days before hand but have not been detected to be on heat. The veterinarian should be asked to examine their reproductive tracts for abnormalities.
5 GOLDEN RULES LOOKING AFTER THE HERD’S ANIMAL HEALTH

1. Develop a disease prevention plan that includes good hygiene, isolation of stock and a regular vaccination programme.

2. Learn to quickly identify sub-clinically sick animals from their physical appearance and behaviour.

3. If an animal is obviously sick, then move it to an isolation pen in order not to infect other stock.

4. Lameness can be a major problem with cows living in sheds. As it can be due to trauma or to unbalanced diet, its cause must be identified.

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5. Providing cows with soft bedding, such as a dirt or sand resting area or rubber mats improves cow comfort as well as reduces feet and leg problems.

6. A written herd health program should be developed that contains management actions for herd health to prevent and control diseases and disorders specific for the region.

7. Do not use old drugs that are past their use by date, to treat sick animals.

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6 GOLDEN RULES FOR HEAT STRESS MANAGEMENT

1. Hot cows lose their appetites. Very thirsty cows lose their appetite.

2. Heat stress will reduce the time cows can cycle, that is show signs of oestrus.

3. Heat stress will reduce the cow’s fertility and if severe, can actually kill the developing foetus inside the pregnant cow.

4. It is better to feed cows during the night, when it is likely to be cooler, as well as during the day.

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5. Extra water is essential on hot days or during summer for the cows to lose any extra body heat.

6. Sheds with low roofs and walls (which obstruct the wind) will reduce natural ventilation and must be avoided.

7. Spraying water on hot cows, even with a hose for just a few minutes, followed by placing them next to a fan (or better natural ventilation), will cool the hot cow. The water should be sprayed over the cow’s trunk, enough to run off the cows hide.

Notes:

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1. Cows need 12 to 14 hours of undisturbed rest each day preferably in comfortable stalls.

2. With well-designed walkways and resting stalls, comfortable lying surfaces and non-slip walking surfaces, cows suffer less lameness, can behave more normally and suffer less stress, have higher daily milk yields and longer productive lives.

3. Cows tied up all day every day on concrete floors are not comfortable.

4. Cows with hindquarters covered in fresh and dry manure are not comfortable.
5. Cows forced to continually lie on dirty hard floors when resting are not comfortable.

6. Cows that have difficulty lying down and standing up because their tie rope is too short are not comfortable.

7. Providing a portion of the daily feed in an outside yard encourages the cows to move around in the open.

Notes:

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8 GOLDEN RULES FOR PRODUCING QUALITY MILK

1. Poor milk quality reduces the shelf life of liquid milk (that is pasteurised or ultra high treated or UHT) and is becoming more important for smallholder dairy farmers.

2. The most important point to produce quality milk is hygiene; both while milking the cows and handling the milk from the cow shed to the milk collection centre.

3. Milking staff should have clean hands and clothes, have no obvious signs of sickness and preferably use gloves.

4. Milking utensils should be thoroughly cleaned with soapy water, followed by hot water, sanitised and hung upside down to drain and dry out prior to the next milking.

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5. Each milking cow should be provided with a separate cloth to clean the udders and teats prior to milking. It should then be washed with soap and running water, sterilised and hung up to dry in the sun prior to using the next milking.

6. Cow’s teats should be spayed or dipped in 7% iodine solution following milking. Your local veterinarian or dairy cooperative should be able to provide this iodine solution.

7. The CMT should be undertaken on each milking cow once each month until the herd reaches a low level of mastitis. Then it can be undertaken in full every three months.

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